

ABSTRACT

The present invention offers increased efficiency and quality in the duplication of a master hologram utilizing an improved method of contact printing. This improved method of contact printing employs a polymer-dispersed liquid crystal (PDLC) recording medium as the duplication blank and/or the master hologram material. The optical qualities of the PDLC material described herein provide an improved method of duplication using single beam contact printing regardless of the material comprising the master hologram. Thus, master holograms originally recorded using highly complex optical geometries (e.g., computer generated holograms) are capable of duplication without the need for multiple beam power/intensity balancing and long recording times. The improved hologram contact printing method described herein works with virtually any type of master hologram, including both reflection and transmission holograms.